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ENDENT MAN

SOME OF HIS CRUTCHES

Addictions

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ADDICTION RESEARCH FOUNDATION

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DEPENDENT MAN

SOME OF HIS CRUTCHES

Addictions

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“In recent years, we have become used to viewing addiction in a much broader scope. It is well known that the mechanisms and symptoms of addiction also occur without the use of any drug and thus without the complications brought about by the chemical effects of drugs. There is the food addict, the reading addict and the love addict. There are also hobbies which tend to outgrow their hobby character and to evolve into an obsessive preoccupation eventually becoming an absolutely necessary condition for well-being and protection against depression.”

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Chemical Comforts and Man

*by S. J. Holmes, M.D., D.Psych.**

I. Introduction: Drugs in Perspective

Since the dawn of civilization, man's instinctive energies have been subject to varied and changing controls. In pre-civilized times when only the fittest survived, man's instinctive animal drives were satisfied or he perished. During this period, he was at the mercy of the elements, other animals, disease — and indeed, man himself. When it occurred to man that collectively he was stronger in his fight against his natural enemies than he was alone, it became necessary for him to develop controls that would allow the survival of such a collective group. From these beginnings, the group appears to have grown in size from families to tribes, thence to cities and countries, and finally, to a community of nations at present separated by differing ideologies.

In gaining the tremendous control of his environment that he has at present, man has had to pay a price — a price that demands that he manage his individual drives within a cultural setting that must make allowances for the survival of the weakest in the group. The popular belief that all men are born equal, and that all can be President or Prime Minister is utter nonsense. Nature is just not that benevolent. Man's innate differences — resulting from his genetic endowment and its relationship to his biochemical and physiological function, compounded by psychological conditioning arising from the stresses of his environment — make for vast differences in feeling, thinking and behavior from one person to the other. Thus, through his varied resources, man is constantly adapting to the challenges of his inner and outer environment. He fluctuates from satisfaction to dissatisfaction, from ease to disease.

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* Dr. Holmes is Director of the Narcotic Addiction Unit of the Alcoholism and Drug Addiction Research Foundation. This article is based on a paper presented to the Section of Psychiatry, Academy of Medicine, Toronto, in November, 1963, and to the Toronto Medical Secretaries Association, April, 1964.

Psychological disease, or conflict as it is called, is associated with anxiety. This anxiety may manifest itself in varied forms — in fight or flight patterns ranging from worry to terror, or from anger to rage, or in still more complex patterns representing combinations of each. Anxiety may occur at the level of awareness or it may be rerouted by subconscious barriers to emerge in such varied external manifestations as pain, agitation, depression, phobias, disturbances of physiological functions and deviant behavior disturbances. Consequently, we can depict man's moods as an ever changing pattern or spectrum. From hour to hour, influenced by inner and outer events, man's ego moves to and fro across this spectrum. At one end of the spectrum lies melancholia or depression; at the other end is mania or extreme agitation. A normal person stays in the middle range, straying into the extreme regions only rarely; if and when he does enter these regions, his social, psychological, endocrine and other biochemical factors adjust and harmony or homeostasis occurs. In the emotionally sick person, this healthy adjustment does not take place. Quite commonly, such a sick person fluctuates between the two extremes. The person at the agitated end of the spectrum is tense and anxious, and will respond to a drug that will soothe or tranquilize; the person at the opposite end, whose load of depression is so heavy that he can't raise his head and whose life is empty, meaningless, valueless and void, will respond to a mood elevator.

Age Old Need

Man's need for such agents goes back beyond the dawn of history. Never has there been a time or place in which man has failed to find himself assailed by care or anxiety. He strives to make life more pleasurable, and at the same time, to diminish the discomforts which inevitably accompany human experience. This has resulted, in the broad sense, in all the improvements in human living — physical, esthetic, mechanical and scientific. As a result of progress, man today is better protected, better clothed and fed, and enjoys better health and a longer average life than man has ever known in a million years. However, in our society he has been hoisted in a period of less than 50 years from the seat of the horse and buggy to that of the automobile, atom bomb, jet plane and space travel — an experience sufficient to unsettle even man's sturdy psyche.

In the inner as well as the outer world of man, upheavals have taken place. Old faiths have crumbled, new ones have not been created. In the resulting vacuum man is lost. Tied to the minute hand of the clock, a servant of steel machines whose laws are inflexible, faced by the insecurities of automation, goaded by ambition and aspirations, scrambling for gain in a crowded, jostling, materialistic world, harassed by the ever-pressing need to keep up with the Joneses, and disturbed by conflict over his aggression and sex feelings, modern man can hardly be blamed if he counts his ulcers and neuroses instead of his blessings, and if he cries out to his physician for the relief of his inner tension — for something that will give him tranquility and peace of mind. Or he may take some other form of self-protection which may involve anti-social patterns of living and/or the use of chemicals. However it may be, it is possible that the individual becomes exposed to chemicals, either depressant or stimulant, narcotic or non-narcotic. These chemicals help man in his external and internal environmental adjustments; as a result of this satisfaction, man forms a chemical dependency which may progress to habituation or addiction to these drugs.

Theories of Addiction

All addicts, excepting the small minority who require drugs for the relief of pain arising from serious organic disease, show evidence of psychiatric disorders. Descriptively, the neuroses, particularly anxiety neurosis and the character disorders, are most common. In the natural history of addictive disorders, these conditions usually seem to precede the addiction. Two psychiatric formulations of addiction are most commonly used:

(1) **The symptomatic, or psychological school** which holds that addicts are persons suffering from physical or psychic discomfort. The drug relieves their distress and this relief leads to the repetition of drug taking, with the consequent development of tolerance or physical dependence. In this formulation, the choice of drug — opiates, alcohol, barbiturates, or any other agent — is accidental, and depends on the drug's availability. Relapse after cure of physical addiction is due to the pyschiatric conditions that underlie the original addiction.

(2) **Psychoanalysts** hold that addicts are persons who have been arrested at or regressed to the oral stage of psychosexual development. In infancy and early childhood, a strong consistent father figure has been lacking while the mother has been overindulgent and rejecting in an inconsistent way. Because of the faulty psychosexual development, the individual comes to regard other persons, particularly his mother, as objects for self-gratification. Since all his needs cannot be fulfilled in reality, the individual reacts with hostility to other persons, often his mother or other women, and drugs are taken because of this conflict. Repetitive use of drugs is ascribed to the continuing need to resolve the neurotic conflict. In this formulation, as in the psychobiological, the choice of drugs is accidental and relapse is due to the psychological psychic predisposition.

Satisfying Specific Needs

Neither of these formulations is completely satisfactory. The number of unaddicted persons having such psychological traits far exceeds the number who do become addicts. In addition, under equal conditions of exposure to a variety of drugs, some persons choose alcohol, others opiates, and still others use another drug. Wikler and Rasor have developed a "pharmacodynamic" formulation of addiction which is independent of personality structure theories. Their theory is that since opiates are known to depress pain, sexual drive, hunger and thirst, individuals whose main sources of anxiety are related to these drives are relieved specifically by heroin and morphine and will choose these drugs. Alcohol and barbiturates impair behavior control and permit the direct, aggressive acting out of conflicts, and will therefore be preferred by persons with this sort of emotional need. It also hypothesized that relief of abstinence symptoms by taking drugs is highly pleasurable, just as is the relief of hunger or thirst by food or water. Through drugs, a new biological need has been created, the satisfaction of which is intensely satisfying. Because of this, addicts like to be physically dependent or hooked, and thus there is the tendency to relapse. In addition, the relief of abstinence symptoms may lead to conditioning, so that symptoms may occur under stress long after withdrawal of the drug. Such symptoms are interpreted as a need for the drug, and enhance the tendency to begin using the drug again.

Testing Theories

The difficulty with the psychobiological and psychoanalytic theories of addiction is that they cannot be tested experimentally. The attraction of Wikler and Rasor's formulation is that it can be partly tested experimentally in animals, especially the aspect of the theory dealing with the conditioning of abstinence. Such conditioning, which is called drug acquisitory behavior, has been worked out in rats by conditioning experiments devised by Wikler, and in monkeys by M. H. Seevers at Ann Arbor, Michigan.

Looking back over the field of the psychology of addiction, it is evident that we have had much theorizing but few facts. The rapid development of the new combined field of experimental psychopharmacology augurs well for the future. We can expect that a steadily increasing volume of quantitative data, derived from rigidly designed experiments, will become available and should shed much light on drug action in terms of psychological correlates. Eventually, such data should lead to more meaningful psychological theories of addiction. It is in this area that the greatest advances may come in the future.

Reasons for Drug Use

Jacobsen has suggested that there are five properties of drugs that induce people to use them:

(1) They may combat fatigue — for example, stimulants such as caffeine, cocaine, and amphetamine;
(2) They may raise a person's mood (spirits) — alcohol, barbiturates, morphine, amphetamine, meprobamate;
(3) They may banish worries — alcohol, tobacco, morphine, meprobamate, Librium, barbiturates;
(4) They may induce sleep — barbiturates, chloral hydrate, alcohol, Doriden;
(5) They may bring dreams — morphine, cocaine, marihuana, mescaline, lysergic acid (LSD).

Of these, the second — raising the mood or spirits — is the most important and to this property the word euphoria is applied. Under the influence of some drugs, we become actively conscious that we are feeling well. This consciousness increases to the point where it feels as though every fibre in our body is telegraphing to our central nervous system that all is well — indeed, has never been so well before. Euphoria can be so intense that otherwise disturbing sensations are completely disregarded. The violent nausea sometimes occurring after the intake of heroin is of no consequence to the addiction prone individual. Naturally, there are grades of euphoria ranging from the point where after a small dose of alcohol a person just appreciates his well being and is less shy and withdrawn, to the point at which an almost orgasm-like feeling is experienced, as described by the narcotic user who injects his drug intravenously.

Man originally found the chemicals which produce the reactions he likes by either depressing his anxiety or elevating his mood, as a part of nature's bounty — in the leaves, juices, bark and fruits of plants. In civilizations previous to ours, he discovered alcohol, the result of natural fermentation, and he has since refined the process of fermentation, brewing and distillation. In comparatively recent times, he has been able to isolate and fractionate chemicals from their raw form, and to form new products by resynthesis. He has progressed further to form many new and varied chemicals — of both the depressant and stimulant type by chemical synthesis alone.

A Definition of Terms

Before proceeding further, it is perhaps best to define our terms of reference in order to have a clear and consistent idea of the phenomena relative to the various drugs to which we will later refer.

Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:

(a) an overpowering desire or need (compulsion) to continue taking the drug, and to obtain it by any means;
(b) a tendency to increase the dose, though some patients may remain indefinitely on a stationary dose;
(c) a psychological and physical dependence on the effects of the drug;
(d) the appearance of a characteristic abstinence syndrome in a subject from whom the drug is withdrawn; and
(e) an effect detrimental to the individual and to society.

Drug habituation (habit) is a condition resulting from the repeated consumption of a drug. Its characteristics include:

(a) a desire — but not a compulsion — to continue taking the drug for the sense of improved well-being which it engenders;
(b) little or no tendency to increase the dose;
(c) some degree of psychological dependence on the effect of the drug, but an absence of physical dependence and hence

an abstinence syndrome; and
(d) detrimental effects, if any, are primarily to the individual.

Classification of drugs according to effect:

(1) **Sedative** — a drug which depresses the central nervous system, especially at its higher levels, so as to allay nervousness, anxiety, fear and excitement, but not normally to the extent of inducing sleep.

(2) **Hypnotic** (or soporific) — a drug used to induce sleep. It depresses the central nervous system more profoundly than a sedative does but it has a restricted duration of effect.

(3) **Tranquilizer** (or ataractic) — a drug which promotes a sense of calmness and well-being without that degree of depression of the central nervous system commonly associated with the action of sedatives or hypnotics.

(4) **Stimulant** — a drug which, by its action on the central nervous system, temporarily enhances wakefulness and alertness, improves mood and lessens the sense of fatigue.

(5) **Narcotic** — In terms of physiology and pharmacology, a narcotic is any agent which brings about a reversible depression of cellular metabolism and activity in the central nervous system. Substances included in any of the groups mentioned above, with the exception of the stimulants, may therefore be regarded as narcotics. In more common parlance and in the proceedings of international agencies and control organizations the word "narcotic" is often limited to drugs like opium, morphine, heroin, pethidine, cocaine, marihuana, and so on, which are subject to a measure of international control.

History, Tradition and Prohibition

The idea that the use of or indulgence in drugs is wrong or harmful appears as a relatively recent entry in historical annals. A royal decree in China in 1729 prohibited the sale and smoking of opium. The smoking of tobacco was even punishable by death in parts of Germany, Persia and Russia. At one time in history, Turkish law provided a death penalty in forms agreeable to God for the violation of a tobacco decree. It would appear that the chief reasons for the early prohibition of tobacco, liquor and drugs probably stemmed from a well entrenched, church supported belief in our masochistic society that any form of indulgence which is pleasurable must, by its very nature, be a sin. However, have we ever stopped to think what an underlying factor money can be as the real promoter of a controversy disguised as moral, religious, ethical or scientific in its presentation?

That medical reasons did have some impact on early prohibition is shown by the condemnation of tobacco by a medical faculty in Holland because it blackened the brain. This type of non-scientific, prohibitive thinking has been instrumental in the appearance of varied prohibitive legislations against narcotics and alcohol during the past two decades — legislation which has been disastrous to say the least. Over 50 years ago, in an address to the Harvard Law School, Oliver Wendell Holmes said, "An ideal system of law should draw its postulates from science. As it is now, we rely on tradition, on vague sentiment, on the fact that we never thought of any other way of doing things as our only warrant for rules which we can enforce with as much confidence as if they embodied revealed wisdom. Who can give reason of any definite kind for believing that half of the criminal law does not do more harm than good?"

II. Non-Narcotic Depressive Drugs

(1) Tobacco

A realistic survey of our population reveals that after air, food and water, most adults (70 to 75 per cent of the men, and 35 to 40 per cent of the women) concern themselves with a fourth item of consumption — tobacco. For these millions, smoking in one form or another may be classed as a basic appetite, a habit and a pleasure not to be lightly swept aside. Cigarette smoking, the only socially acceptable addiction, is condoned and even tacitly encouraged in our society — a society which reaps a large profit from the use of tobacco in this form. In Canada, about seven per cent of the entire Federal revenue comes from tobacco excise tax.

Whether habitual cigarette smoking is the repetition of a complex ritual whose periodic re-enactment has a calming effect, or is, in reality, a method of administering the powerful alkaloid nicotine at intervals to stave off the pangs of withdrawal symptoms is controversial. However, the personality of the individual appears to determine, in large measure, the kind and degree of smoking he does. Of the attempts to distinguish various types of smokers from the general mass, one of the most interesting is described in an article by Kahn and Gildea in the Canadian Medical Association Journal. These two researchers divided smokers into two large groups: the "lusty" and the "tense". While the "lusty" have appetites to satisfy among which is smoking, the "tense" have tensions to relieve, and one of the ways in which they rid themselves of this tension is by smoking. It is suggested that "lusty" smokers are governed more by the act of smoking, while the "tense" smokers derive benefit from the pharmacologic effects of nicotine. The preference of "tense" smokers for cigarettes, a form of smoking in which nicotine is especially available upon inhalation, would appear to bear this out.

Three Types of Smokers

Garcia divided smokers into three categories. First, there is the complacent smoker, who is very similar to the snob smoker, and who does whatever people in his company are doing at the time. In Garcia's opinion, this group contains the most smokers, and these individuals can break their habit very easily. The neurotic smoker falls into the second group. This type of individual is incapable of inhibiting useless, unproductive or abnormal acts. He also adopts the gestures or attitudes of those persons with whom he associates, and allows himself to be dominated by them. In the third group are the toxophilic smokers, for whom nicotine and/or other agents in the smoke, constitute the reason for smoking. Suppression of their smoking habit produces abstinence symptoms. It is reasonable to assume that the act of smoking is of most importance to the complacent and neurotic smoker, while the pharmacologic effect of nicotine is of most importance to the toxophilic smoker. Nevertheless, smoking is being spoiled for the public these days. In spite of the advertisers' art of presenting smoking as desirable from many and varied points of view, scare headlines reveal statistics which show that the use of tobacco does indeed lead to cancer of the oral cavity and the lungs and to complications in the cardiovascular system.

Physiological Effects

As tobacco burns, over two hundred chemicals appear, interact, combine and vanish — for the most part down the smoker's throat. Nicotine is the most familiar component of tobacco smoke and is responsible for its acute systemic toxicity. This chemical was first isolated from the leaves of tobacco in 1843. It has a transient, stimulant action and a secondary, more persistent, depression of the ganglia of both the sympathetic and parasympathetic nervous systems. Even after the butt is crushed, it takes nearly half an hour for the smoker's physiology to return to a basal state; or, for those who are addicted, to feel the need for another cigarette. Tolerance to nicotine develops when the drug is repeatedly administered. This is seen in the reaction of the confirmed tobacco smoker who is unaffected by an amount of the alkaloid much larger than that which would produce symptoms in the novice. Approximately 90 per cent of the nicotine in inhaled smoke is absorbed, compared with from 25 to 50 per cent of the nicotine in smoke drawn only into the mouth before being expelled.

Recently, in spite of the increased evidence of the pathology wreaked by tobacco smoking, and the popular desire to cut down smoking, consumption figures produced by the tobacco industry would indicate an increased consumption by the informed people. Why, then, do people smoke? It would appear that they smoke because the satisfactions they derive from the habit are greater than the drawbacks. In our GO-GO society smoking helps us relax, eases our tensions and provides pleasure in a life where worries are many. Even when faced with the possibility of leaving this earth a few years early, the vast majority of smokers prefer to play the odds rather than forsake the habit. After all, worries tweak more ulcers than smoking ever could and it is interesting to speculate on the fate of man if denied tobacco and our next depressant, alcohol, as they are used by the average consumer. However, the sheer perversity of the tobacco lover is best expressed in these few lines by Graham Hemminger:

"Tobacco is a dirty weed: I like it.
It satisfies no normal need: I like it.
It makes you thin, it makes you lean,
It takes the hair right off your bean;
It's the worst darn stuff you've ever seen:
I like it".

(2) Ethyl Alcohol

Next to tobacco, the most commonly used depressant is ethyl alcohol which is consumed by about 70 per cent of the adult population in our culture. In its various beverage or medium forms, alcohol is an addicting substance for those personalities that become dependent on it for the relief of their symptoms of discomfort, or for those who use it in a daily beverage pattern. An estimated two per cent of the total population in our country develops a problem relative to the use of alcohol and may thus be termed alcoholic.

On the average, it takes about 15 years for men to move from the stage of regular or heavy use of alcohol to addiction. This process takes between 11 and 12 years for women. Details about the many facets of this chemical in human living is a subject worthy of much discussion but is beyond the scope of this article. However, it is important that the true perspective of the place of this chemical in human misery be recognized by the helping professions.

(3) Barbiturates

This chemical, in the form of barbital, was first introduced into medicine in 1903 under the trade name of Veronal. In 1912, phenobarbital or Luminal was introduced. Since that time, over 2,500 varied barbiturates have been synthesized, and of these over 50 have been marketed. The early barbiturates were longer acting and so tended to produce hangovers. The new ones are short acting and hence are more popular. Technically, they are known as Sodium Amytal, Seconal, Nembutal, Pentothal, Butisol, Dial, Mebaral, Delvinal and Medomin; in the parlance of the street, they are known as "Blue Bombers", "Yellow Jackets", "Red Devils", "Goof Balls", and so on.

Barbiturates can produce all degrees of depression of the central nervous system functions — from slight sedation to deep coma, and in the case of an acute over-dosage, death from the depression of the respiratory centre. The level of action of barbiturates on the nervous system is not clearly understood, but is thought to range from the cerebral cortex to the recticular activating systems in particular; but barbiturates do affect most areas of the brain to some degree. Barbiturates have a wide range of use in medicine including the sedation of anxiety, sleep production, as an anaesthetic for anticonvulsant action and so on.

These drugs create problems both in regard to acute poisoning and to addiction by chronic usage. Acute poisoning may occur accidentally when barbiturates are taken by children, or when an overdose of a prescribed sedative is taken as a result of impaired judgment or an impatience for sleep; acute poisoning may also result from an attempt at suicide. Between 1922 and 1945, the number of accidental fatalities caused by barbiturates increased by 300 per cent, a rate of increase exceeded only by carbon monoxide poisoning. In 1960 and 1961, barbiturates were the cause of 25 per cent of all accidental deaths in Canada.

That barbiturates can be addicting and can cause physical symptoms of severe magnitude was recognized as early as 1912 by the Germans. Isbell further demonstrated this at the U.S. Public Health Service Hospital at Lexington in 1950 by developing an addictive relationship to barbiturates by former morphine addicts in approximately five months. Addiction to barbiturates is regarded as a more insidious and serious disorder than is addiction to narcotics, since withdrawal from barbiturates is more severe and has a higher mortality possibility than withdrawal from narcotics. Barbiturates are often used by narcotic addicts when a supply of narcotics is not available, and by alcoholics either on withdrawal or as a substitute for alcohol. They are also used by the chronically anxious, psychoneurotic person who obtains them on a medical prescription over a long period of time — until his tolerance grows and his need becomes greater than the prescription allows. The number of people using barbiturates in this way is not known, but is estimated to be very large. The illicit market in these drugs has grown in recent years so that in spite of increased regulations in prescription control set down in 1953, it became necessary in 1961 to include these regulations under the Controlled Drug Regulations: to put their supervision under the Division of Narcotic Control, Department of National Health and Welfare: and to make the abuse of these controls an indictable offense.

(4) Tranquilizers

The term tranquilizer covers a multitude of drugs that are fast growing in number. Some of these are dangerous medically and are already known to be addictive; with others, we do not as yet know what the long-range effects will be. There are however, three main groups:

(a) The first of this group of drugs was discovered in India where it was used for centuries in powdered root form for the treatment of a wide variety of disorders, especially certain types of insanity. The drug is called **Rauwolfia** and is a product of a plant known as Rauwolfia serpentina. In 1931, a number of alkaloids isolated from this plant were shown to have the ability to lower blood pressure in the hypertensive patient, and to have a mood-modifying effect in psychiatric patients with anxiety features. Synthetic preparations of the alkaloid Reserpine have now been developed and are known as Serpasil and Reserpoid. These drugs are known to cause depression but as yet no tolerance or addictive properties have been reported. However, the side effects experienced, plus the development of new compounds in the succeeding series, soon supplanted this preparation.

(b) **Meprobamate** — Under this classification are two drugs known as Equanil and Miltown. Developed in the 1950's, they resemble their precursor, Mephenesin, and have since replaced this latter compound which, in my observation during its limited period of use, became associated with psychological dependence and tolerance in chronic usage. Early enthusiasm for the meprobamate drugs, and the belief that since they had only peripheral action on the nervous system (which further research has disproved), and thus were safe from addiction, made them extremely popular for the relief of nervous tension. So much so that they rapidly outsold aspirin in the United States, and the production for consumption was phenomenal. Gradually, however, reports relating to the addiction potential of these drugs grew. Equanil and Miltown were found to be used quite extensively by people who formerly were addicted to alcohol and barbiturates. These people developed considerable tolerance and had fairly severe withdrawal symptoms including convulsive seizures. Thus, it became obvious from varied sources that meprobamate was a potentially addicting chemical for those addiction prone people who exceeded the therapeutic dose.

(c) Other tranquilizers of the **phenothiazine** group, including Largactil, Sparine, Pacatal, Trilafon, Phenergan, Mellaril, Stelazine and so on, are used relatively frequently. Therapeutic dosage of these drugs may vary considerably in amount depending on the degree and severity of symptomatology, and may be used for variable periods of time with no recorded addiction problems. Chlordiazepoxide (or Librium) is reported, like barbiturates and meprobamate, to be a potentiator of alcohol and to have a cross-tolerance relationship to alcohol. Cases are being reported where dependence and tolerance to this drug have been observed, but I have seen very little in the way of physical symptoms on withdrawal. In this regard, the future of Valium (Diazipan), which is widely used, must await the test of time.

The tranquilizer series would not appear to be primary addicting drugs in that there is no "kick" or conscious change as experienced with alcohol, barbiturates or opium derivatives. Tranquilizers are, however, secondarily addicting when used to treat or ameliorate symptoms in people who have been addicted to other chemicals. This would appear related to the sub-cortical areas of pharmacologic action.

(5) Chloral Hydrate

This drug was first made in 1832 and used medically in 1869. A chlorinated derivative of ethyl alcohol, it has a hypnotic and sedative property and as such, may cause acute poisoning when taken in overdose. When used in mixtures with alcohol as knock-out drops, it may be dangerous to life. Continued use of chloral hydrate may lead to habituation with tolerance and addiction, and with delirium frequently being seen on withdrawal. This drug is irritating to the stomach, and injurious to the liver and kidneys; thus, it was rapidly replaced in the first half of the 20th century by the popular barbiturate drugs. During the past decade, chloral hydrate has been used therapeutically more frequently since barbiturates have become suspect.

(6) Paraldehyde

Paraldehyde was discovered in 1829. A polymer of acetaldehyde, it is more potent and more toxic than ethyl alcohol, but less potent and less toxic than chloral hydrate. Occasionally it becomes a preferred substitute drug by the alcohol addict who has been introduced to it for the treatment of alcohol withdrawal symptoms. It is an addicting drug and may also cause death in overdosage. Delirium is frequently seen on the withdrawal of paraldehyde.

(7) Bromides

The bromide element was first discovered in 1826 in the waters of the Mediterranean Sea. By 1850, its effects as a depressant of the nervous system were being recognized in cases where it had been tried as a therapeutic tool for other diseases. Over the years, bromide became quite widely used as a sedative and anti-epileptic drug. It became popular in medications such as: triple bromides, used to relieve stomach distress — for example, Bromo Seltzer; cold remedies; and hypnotics such as Calmex, Nytol, Carbromal and Bromalate. In the body, bromide accumulates and replaces the chloride element in the body chemistry. There may be disturbances from intoxication on ingesting these drugs, ranging to dermatitis and psychosis from their accumulation in the body. This drug has a habituating property for certain addiction-prone personalities who use it as a substitute for their favored drug of addiction.

(8) Doriden

This drug, known generically as glutethimide, is reported to be an oral non-barbiturate sedative-hypnotic. This is to potentially designate it as being safe as a non-barbiturate. It has been recognized, however, that emotionally dependent or addiction prone personalities will become psychologically dependent on Doriden, and, over a period of time, will increase the dose relative to their tolerance factor. The manufacturer of this drug suggests gradual withdrawal; and, in some cases, I have noted tremor on withdrawal.

(9) Methyl Parafynol

Known generically as methyl parafynol, Dormison is a mild sedative. In the few cases I have seen, tolerance developed for sleep purposes. Death has been reported from cardiac arrest in overdose. Dormison also causes considerable gastro-intestinal distress when taken in larger dosages. In this series is another commonly used sedative-hypnotic called Placidyl.

(10) Ureides

These chemicals, which are related structurally to barbiturates, include Sedicin, Sedormid, Persomnia. They have a weak hypnotic action and were thought to be safe enough for over-the-counter sale in drug stores. They quickly increase in tolerance relative to their ability to produce sleep and, at best, serve to tide a person over until a more reliable hypnotic-sedative can be procured. Since the development of controls on these drugs in 1961, some of them have been removed from the market because their popularity was based on their availability rather than on any recognized therapeutic value.

III. Narcotic Depressive Drugs

In 1680, Sydenham wrote "Among the remedies which it has pleased Almighty God to give to man to relieve his sufferings, none is so universal and so efficacious as opium". In recent years the narcotic drug addict has often remarked to me, "If God has anything better than "H" (heroin) then He must have kept it for Himself". These two statements sum up the role that opium, its derivatives and in more recent years, the synthetic narcotics. have played in the life of man. Opium has been known to man back beyond the records of history, in civilizations prior to ours. Obtained from the juice of the poppy plant indigenous to Asia Minor, the use of opium was first recorded in Greek writings of the third century, B.C.

Until well into the 19th century, opium was used in crude extracts such as tincture of opium or laudanum, elixir of opium or paregoric, in camphorated form, and in dried form in Dover's Powder. The alkaloids of opium represent about 25 per cent by weight of the gummy mass which is the dried, milky juice of the poppy grown in Egypt, India, China, Turkey, Iran, Yugoslavia, Bulgaria, Greece, Macedonia, Afghanistan, Kashmir, Pakistan, Burma, Thailand and Indo-China, and in some parts of the U.S.S.R., Mongolia, North Korea, Mexico and Argentina. For thousands of years, opium has been used as a drug for the relief of human affliction, and as an anaesthetic by drinking it as an infusion. The smoking of opium, first a major problem in China, is only some hundreds of years old. Now, however, there is a world-wide spread of addiction related to this drug and its alkaloids. The United Nations Committee on Narcotic Drugs has been attempting to develop a means of controlling the production and distribution of opium for medical purposes so that the world production can be held to about 450 tons per year. This is the amount estimated to be necessary for medicinal purposes — in contrast to the present estimated production of about 2,800 tons of opium per year.

The Myth About Narcotics

In recent times in both the United States and Canada, it has become apparent that there is a necessity for a review and revision of our methods of controlling narcotics for human use.

especially with reference to people suffering from narcotic addiction. Perhaps a review of the development of this perplexing situation will present certain valuable lessons which will help us in our attitudes and our methods of controlling that vast array of medications constantly being developed to insulate man from anxiety in this chemical age of living. There is an apparent contrast in the rate of addiction and the methods of handling addiction in European countries as compared with that in the North American continent. What does this mean for us in attempting to solve our dilemma? Should we heed their experience or continue with the defense that we are a different culture and therefore their experience is not pertinent?

Opium and the Civil War

There is not much comment on the use of opium in the U.S. until after the Civil War. During this period, the use of morphine via needle injection came to be used both for the maimed and suffering soldiers and for their anguished relatives. However, in spite of this obvious relationship of emotional factors with drug use for relief, the main emphasis became focused on the physical or enslavement properties of opium and its derivatives. The shift from alcohol to opium was regarded as fearful, and it coincided with the beginnings of the factual and semantic distortions leading to the introduction of drastic legal and administration methods of addiction control. On the basis of the need to reduce and cure the slavery to opiates, there developed an enormous mass of misinformation about their physical and moral effects. By implication, a similar situation has developed around marihuana and a neglect of the serious effects of alcohol has been a resultant. The collectors and disseminators of this misinformation have included sincere laymen and law enforcement people, as well as otherwise competent physicians. In their enthusiasm and zeal, they have focused more on the vice factors rather than on a balanced accurate appraisal of drug addiction. This has resulted in the revulsion of the general public towards the addict, making him suspect in a much broader sense. The fact that many addicts are capable of being productive workers and good citizens while using narcotics is ignored and emphasis is placed on the fact that some addicts are unreliable or have peculiar personalities — as if to imply that this is the typical addict.

From Medical to Criminal Addiction

After the Harrison Act became law in the U.S., there began a widespread indictment and imprisonment of physicians for narcotic violations. This occurred, according to Dr. Lawrence Kolb, despite the fact that only a small percentage of the physicians prosecuted over the years have been guilty of doing anything contrary to the best of medical practice — which the act purported to allow. The result was that physicians discontinued their practice of treating addicted people in order to preserve their freedom and reputations as honest men. This action of the physicians seems to relate in time to the beginning of petty crimes being committed by addicts in order to secure the drugs which could prevent their suffering and possible death. This, in turn, led to a popular misbelief that the drugs themselves had a sinister property which could change normal people into moral perverts and criminals, and this progressed to the more recent belief that all addicts are criminals — thus lending support to those whose answer to addiction is solely via legal controls, no matter how sophisticated their disguise may be.

The ever increasing supervision and inspection of physicians, and the making of veiled if not actual threats by narcotic control officers, has caused many physicians to retreat so far from rational thinking about narcotics that even they tend to believe the myths that engulf the subject. Others may become so overzealous in their attempts to help the addict that their emotional involvement may leave them open to technical rather than therapeutic violations of the Act, and to potential entrapment as well — and in all cases in the U.S. as in Canadian law, the burden of proof is on the accused. In all of this, newspapers have been an unwitting and irresponsible tool, a secondary source of propaganda which has been very effective in distorting public opinion.

The Problem in Canada

Numerically, the problem of narcotic addiction is not large in Canada. The 1962 figures from the Narcotic Control Division of the Department of National Health and Welfare indicate that there are at least 3,656 narcotic addicts in this country. Of this total number, there are 3,136 criminal or street addicts, 306 medical addicts (addicted in the course of medical or other treatment) and 134 professional addicts (doctors, nurses, dentists, druggists and veterinarians). In order of their highest incidence, narcotic addicts are found in the Vancouver area, the Toronto-Hamilton-Windsor area, and the Montreal area. Whereas the problem of narcotic addiction is not as high, numerically, as that of other drug relationships, it does have widespread socio-economic complications. But most of all, narcotic addiction seems to serve as a focus of public and police anxiety, rather than being regarded in a proper perspective more suited to this modern age of chemical living.

The seven narcotic drugs most commonly encountered in legal and illegal use in our society are as follows:

(1) Morphine

Morphine was the first alkaloid to be isolated from opium, and this was done in Germany in 1803. A highly addicting drug, the average dose of morphine for a normal person is ⅙ - ¼ of a grain, with one grain being fatal. The tolerance of the addict, however, may be such that he will use 10 grains or more, several times per day. Morphine is used more by medical and professional addicts than by the street addicts who prefer heroin.

The use of morphine became quite popular in the United States during the Civil War, and it was also at this time that the hypodermic method of administration was developed. In street parlance, morphine is called "M", "Junk", "White Stuff", "Emma", and so on.

(2) Heroin

This drug is a product of morphine made by mixing morphine and acetic acid. Discovered in 1898, heroin at first was believed to be a safe substitute for morphine which had been found to be highly addictive in a period of a few weeks to a couple of months of usage. Experience proved, however, that heroin was even more addictive. Available only on the illicit market, it has always been the street addict's drug of choice since it has a higher euphoriant effect and lasts a shorter time. In street parlance, it is referred to as "H", "Horse", "Harry", et cetera.

(3) Codeine

Codeine was first isolated from opium in 1832, but it may also be made from morphine. It is addictive, but not to the same extent as morphine or heroin. It may be obtained in many ways, most frequently by taking C-2 or 222 tablets in large doses, or by drinking a cough mixture containing codeine.

(4) Demerol

This is a synthetic narcotic which, at first, was felt to be a non-addictive substitute for morphine. As with heroin, however, this proved not to be the case. Demerol is a favorite drug of the professional and medical addict, but it is used occasionally by street addicts. Dosage is usually higher for effect and some authorities consider it to be more dangerous than heroin since convulsions may occur in withdrawal.

(5) Methadone

Methadone is a synthetic drug developed during World War II. An addictive drug, it may be used as a substitute for morphine. Since, however, withdrawal from Methadone is slower in onset and milder than withdrawal from morphine, heroin or Demerol, it is frequently used as a substitute until the addict achieves stability, at which time it is withdrawn. The average replacement dose varies from 20 to 40 milligrams every 4 to 6 hours by mouth, progressively reducing this dose over 7 to 14 days.

(6) N. - Allynormorphine - Nalline

This is a morphine-related substance prepared from codeine, and it is an effective antidote for morphine, heroin, and Methadone poisoning. It may also be used to check if a person is using, or addicted to Demerol or one of the three drugs mentioned above. If the addict has had one "fix", a reaction may be detected in the pupils of his eyes; if he is addicted or "wired", withdrawal symptoms will be precipitated. In street parlance, it is called "Babo" since it "takes the user to the cleaners".

(7) Marijuana or Marihuana

Marihuana has an ancient background. It originates in various hemp plants the world over, and its active ingredients will vary in potency with the different names — such as hashish, bhang, ganja, and marihuana — used to describe it. The drug is taken habitually for its psychic effects by millions of people in all parts of the world. Preparations of hemp are smoked, chewed, ingested and snuffed.

Marihuana smokers notice a lightness, a feeling of power and distortions of time — space and kinesthetic sensations which are usually regarded as pleasurable. Some smokers describe distortions of body sensation with feelings that their arms and legs are no longer attached to their bodies or that their head is much larger than it is in reality. Marihuana smoking is often accompanied by laughter similar to that seen in mild alcohol inebriation. In some people, this drug increases sexual drive — a factor ascribed to its use in mixed parties. It also creates a voracious appetite in contrast to the opiates. Artists and musicians claim an increase in perception, both in the appreciation of the work of others or of their own work while under the influence — but they will admit that, in reality, this is not true when they actually see their art production or hear their musical output recorded on tape. Some say that the intoxicating effect of one marihuana cigarette is no more than that of one drink of whisky. The fact that a smoker found with one cigarette may be sent to penitentiary is fantastic and ridiculous when compared with the use of alcohol and its effects. The situation is really a disgrace to our civilization and merits much consideration.

Danger of Addiction?

There has been some contrast in the reported characteristics of marihuana smoking as presented by the law enforcement agencies and the people who regularly smoke this weed. Law enforcement agencies present it as a vicious habit which is spreading to teenagers in schools, which is associated with sexual violence and perversion, and which leads directly to heroin addiction. Confirmed smokers report an average consumption of four to 10 cigarettes per day, with no (or very little) increase in tolerance, with varied psychic dependence, with no withdrawal symptoms, and with no problem associated with disuse when it is not available. The only link with narcotic drugs is that marihuana is illegal. People are forced into similar areas and methods of dealing for marihuana as others are for heroin and, at times, this availability and association may lead to a change of drug habit from marihuana to heroin.

IV. Hallucinogenic Drugs

When discussing the hallucinogenic — or psychomimetic or dysleptic — drugs, it should be pointed out that despite the recent interest in LSD 25 and the resulting clamor by both lay and professional people, these drugs are as old as our culture, and their use and abuse has waxed and waned with the spirit of the times. To mescaline and ololiqui, however, there have now been added the derivatives of lysergic acid, psilocybin and psilocin, some other psychoactive tryptamine derivatives like bufotenine, dimethyltryptamine, and diethyltryptamine, and a number of atropine-like substituted phenylglycolates including phenyl cyclidene and butoxamine. These drugs have in common an ability to induce sharp changes in states of awareness, perception, self-perception, self-communication and communication with others — changes which are exquisitely dependent on the situation and the social setting in which these drugs are given.

It is not within the scope of this review to examine either the promise of these drugs as a therapeutic agent or as a research tool to examine communicative or integrative capacities of the nervous system. However, it must be recognized that the publicity given to these compounds, and in particular to LSD 25, has created what might be described as a professional and lay hysteria — to the point where the use of such drugs as a cure-all in practice is questionable, as is the spread of their use through illicit channels to those personalities who like the "way out feeling" that this type of drug provides. In Canada, this concern has resulted in the restriction of LSD 25 for research purposes only at the present time.

(1) Peyote or Mescaline

This drug is obtained from a cactus plant which grows in the Rio Grande Valley of the United States. Various American Indian tribes chew peyote buttons — the top of the cactus plant which has been cut off and dried — for religious purposes. The Indian believes that God has put some of His Holy Spirit into the peyote and the changes in perception that follow the chewing of the drug are associated with this belief. This belief has stemmed from the ancients who regarded drugs as God-given gifts and praised those that were pleasurable and mood lifting. For centuries, drugs played a role in tribal, war and religious ceremonies. The visual hallucinations experienced are of varied types; however, the individual's remaining senses are left and he retains insight. Since this drug is rapidly excreted, its effects wear off in a few hours. Mescaline has been used experimentally to produce schizophrenic-like effects. It is also used sometimes by musicians and other addicts for its ability to induce perceptual changes which are quite similar to those of the synthetic LSD (lysergic acid diethylamide).

(2) Lysergic Acid Diethylamide or LSD 25

This is one of a group of drugs which have the power to produce hallucinations and are thus termed "hallucinogenic". These random images become transformed into vivid phantasies when LSD is used in therapy, and the drug is thus better termed psycholytic or mind-loosening and psychedelic or mind-expanding.

These phantasies, developed by the careful direction of the therapist or therapeutic group, bring into consciousness factors of the life situation long hidden or repressed in the unconscious by fear, guilt, prejudice or other psychological resistance. The dosage of drug which may be taken orally or by injection varies from 25 to 400 micrograms. Tolerance is very rapidly developed and for therapeutic purposes, successive sessions are spaced at intervals to accommodate this factor. Those who practice with LSD believe that the drug results in a selective undoing of the ego functions, each process uncovering and bringing into consciousness earlier ego images. The mechanism of this action is not known. Conscious recollection of these events is maintained, and it has been observed that patients will relive the feeling and thoughts of childhood and can identify with the age period represented. These memories can then be recalled at later dates without the aid of the drug for further therapeutic value.

Controversial Claims

The value of LSD and allied drugs is still very controversial. Some authors claim almost miraculous changes in various personality disorders among which alcoholism and drug addiction are cited. These are so miraculous at times that they almost border on being foolish. We must consider that we have developed a drug intoxication in the patient, and so his experience as he relates it, may be open to question as to its truth in fact — even though patients recall events which they later claim are confirmed by other sources. On the other side of the coin, we must be aware of the suggestive factor of the therapist and his beliefs psychodynamically, his interpretation of the patient's data, to the time of the LSD therapy and his belief in the efficacy of LSD, which in my contact with LSD therapists has at times bordered on the ecstatic. Certainly at this time, with our limited experience, we should keep an open mind with regard to the value of LSD and not get over enthused nor overly prohibitive. We must be cautious in our selection of patients for its use as pre-psychotic states have been uncovered and made florid by LSD, and post-LSD depressions have led to suicide.

V. Stimulant Drugs

(1) Caffeine

Caffeine is found in a large number of plants widely distributed throughout the world. Wherever these plants are indigenous, natives use their aqueous extracts as beverages, and the consumption of some of these beverages — such as coffee, tea and cocoa — is practised all over the civilized world. In plant form, caffeine is usually found with two other stimulants — theophylline and theobromine. It is also to be found in synthetic form in such tablets as A.P.C.&C., C-2's, 222's and so on. It stimulates all portions of the brain, and its main action is on psychic and sensory function. It produces a more rapid and clear flow of thought, and allays drowsiness and fatigue. There is a keener appreciation of sensory stimuli, as well as more sustained intellectual effect and a more perfect association of ideas.

The average cup of tea and coffee contains approximately the same amount of caffeine — about 100 to 150 milligrams. The degree to which a person is stimulated by a given amount of caffeine varies, and is possibly related to the temperament and personality development of the individual. Some persons may find a single cup toxic. Over-indulgence in caffeine may lead to chronic intoxication, with irritability and insomnia. Psychic dependence can develop to caffeine, with the result that some people become heavy coffee drinkers or take a large number of 222's each day. The coffee with its oils may, in addition, irritate the stomach and cause diarrhoea; tea with its tannin may produce constipation; 222's containing acetylsalicylic acid and phenacetin may cause excess sweating and methemoglobinemia. However, the morning coffee habit, which is reinforced throughout the day, appears to be an American cultural habit, and a daily dose of from five to eight cups of coffee should not cause adverse symptoms from the caffeine in a person of average weight.

(2) Amphetamine

This drug was discovered in 1930. It resembles ephedrine but is a more powerful stimulant of the central nervous system. Amphetamine occurs in many forms and combinations of benzedrine and dexedrine. It is commonly used by some personalities to enhance their performance, alertness, to increase their initiative, to elevate their mood, for enhanced confidence, euphoria and elation, for a lessened sense of fatigue, increased motor and speech activity, and an increased ability to concentrate. It does this by increasing the drive force to overcome superego controls and hence there is often a resultant depression when the drug wears off. Amphetamine is also used in weight reduction, and often overweight people with vulnerable personalities will form a habit to the drug. Another drug with a potentially similar relationship is Preludin or Phenmetrazine.

Amphetamine is commonly used by alcoholic, barbiturate and narcotic addicts who may term them "happy pills", and by athletes who may refer to them as "pep pills". The tolerance factor in addiction prone personalities is quickly reached and may achieve quite a high dosage. Toxic psychosis may be produced with visual and auditory hallucinations, paranoid delusions and so on, in a fashion similar to that produced by cocaine. There is very little, if any, disturbance from withdrawal.

(3) Psychic Energizers

This category comprises an ever growing series of drugs, which to date do not have an addictive potential. It has been the experience in some cases that a habit formation will develop, and that these patients will find it very difficult to withdraw from a chemical that relieves them of the pain of depression.

(4) Cocaine

Cocaine is derived from the leaves of a cocoa tree indigenous to Peru and Bolivia. The leaves of this tree have been used for centuries by the natives to increase their endurance through stimulation of the central nervous system. Cocaine was isolated as an alkaloid by a German scientist in 1860, and in 1886 was noted for its property as a local anaesthetic. A stimulant of the nervous system, cocaine first affects the brain — showing first as restlessness and excitement — and then moves downward through the rest of the nervous system. There appears to be increased mental and physical power, and there may be considerable perceptual disturbance and paranoid ideas — many addicts carry arms or weapons to respond to such stimulation. Cocaine is usually taken by sniffing, and many addicts may have their nasal septum perforated as a result of its toxic effects. Tolerance may be quite high and psychic dependence is great, but there is no abstinence syndrome. Today, cocaine is not seen much on this continent, but it used to be taken in conjunction with morphine. The combined cost of such drugs is possibly so prohibitive that cocaine was passed up for the other narcotics of choice. In Britain, however, cocaine is reported to be used by some addicts at the present time.

VI. Some Conclusions

In conclusion, we have seen that man may form a drug relationship that may lead to habituation or addiction with a variety of substances — many of which are not narcotic drugs. Society has demanded conformity and has sought various means to force individuals to behave in accordance with a prescribed plan believed best for the society at that time. This plan is best satisfied with a balance between work and play, and while this balance may have varied proportions which differ one from another it is, nevertheless, healthy for the individual.

The kind of work and the kind of play may vary considerably, one from the other and can also vary with the times, as in times of war or in times of peace. When disproportions arise in this balance, for whatever reason, a state of tension or disease ensues. If this tension is internalized, the symptom picture may be described as ego alien, and when it is externalized, it may be described as ego syntonic. The ego alien types of disturbances, which fall into psychotic and neurotic classifications, have been the subject of much study and development in methods of medical treatment over the last 100 years. The ego syntonic types of disturbances, which range from the psychopathic personality to the character disorder and sociopath, are just beginning to be studied. It is to be hoped that in our era we will see a development in the treatment of these disturbances move, under medical direction, from the correctional institution to the appropriate hospital and clinical setting.

Both types of disorder may be complicated by the drug relationship, the epidemiology and treatment of which still remains to be further defined by research as well as prevented through both professional and lay education. The ego alien personality finds relief with drugs that reduce superego or conscience controls — for example, alcohol and barbiturates — or those which increase id or drive force, such as caffeine or amphetamine. The ego syntonic or acting out personality will find relief with such drive reducing drugs as the opiates or synthetic narcotic derivatives; and these personalities may be made more uncomfortable by the use of alcohol or barbiturates.

Study the Greater Problem

At the present time, society is greatly troubled by the prevalence of drug addiction, particularly through the use of opium and its derivatives morphine and heroin, as well as some of the synthetic opiates. By contrast, society is not sufficiently concerned with the problems of alcoholism, barbiturate addiction, tobacco and caffeine usage. In fact, with the latter two, one might describe the situation as a culturally approved chemical relationship. One might also say that society is over-concerned with the problems involved in the case of marihuana and, to some extent, over-anxious about the use of opium and its derivatives, while seemingly quite oblivious to the spread of drug relationships to that ever-growing group of drugs in the tranquilizer series. Tranquilizers should not be resorted to for the treatment of anything less than an incapacitating illness. The picture of the snarling, vicious monkey transformed by a few milligrams of a chemical into a friendly, tranquil and happy animal, as seen in a national weekly, fascinates one in a frightening way. Such a creature is a pleasure to have around the laboratory — but he would not last ten minutes in his native jungle. Similarly, mankind is perfectly capable of tranquilizing himself into oblivion.

Assess the Potential Dangers

The era of chemical comfort or psychochemistry is advancing at such a rapid rate that it is difficult to keep up with new developments in the field. Pressure from the advertising medium is exploiting the pleasure-pain principle that man is seeking fast relief for his anxieties — even to the point of reducing that which is necessary for effective living or for being sufficiently comfortable. As a result, a severe physical disease may develop without the patient being aware of it. Drugs are no final answer — but that they may play an effective role, one person from another, and be very necessary for effective living in our society — should also be recognized and accepted. However, one must always evaluate all the factors referable to the use of chemical comfort, either by people on their own volition or by prescription, before passing judgment. That such drugs may be habituating or addicting must be evaluated in terms of what their value may be to mankind individually or collectively; but nonetheless, we must not lose sight of this addiction potential in our search for relief from nervous tension.

In this regard, the widespread opinion — based on a feeling generated by law makers that there is something immoral in depending on drugs either for release from gloom or for pleasure — has resulted in the present controls on narcotic drugs and some of the non-narcotic drugs, and a desire for a further increase in this control. This type of legislation makes it a crime for an unauthorized citizen to possess certain drugs, and puts a surveillance factor on the doctor treating his patients with certain drugs. To what extent is this merely one more expression of the growing tendency of law to encroach more and more on the personal liberties of the individual and the professional liberties of the doctor? Clearly, then, there is a need for further clarification of the medico-legal factors pertaining to the use and prescription of the varied chemical comforts available to man. This clarification must be based on scientific research and not on the fears and prejudices often presented as a cover for the main motivation in the background — which is often money. not man's welfare. ■

SUPPLEMENTARY READING

Ebin, David (Ed.): *The Drug Experience*. Orion Press, New York 1961, 385 p. An anthology, giving personal experiences of "travellers into drug land," searching for new levels of perception and understanding.

Hesse, Erich: *Narcotics and Drug Addiction*. Philosophical Library, New York 1946, 219 p. Covers the whole field from Opiates and Marihuana, Mescaline and Cola to Alcohol, Tobacco and Coffee.

Huxley, Aldous: *The Doors of Perception* and *Heaven and Hell*. Chatto and Windus, London, 1960, 152 p. A novelist's opinion on the psychological impact of psycho-effective drugs. Personal experiences with Mescaline.

Jellinek, E. M.: *Disease Concept of Alcoholism*. Rutgers Center of Alcohol Studies, New Brunswick, N.J., 1960, 246 p. The world's foremost authority on this problem explains the historical development of attitudes toward alcoholism as a disease, analyzes various scientific approaches to the problem, and reviews beliefs and attitudes in different segments around the world.

Lewin, L.: *Phantastica—Narcotic and Stimulating Drugs*. E. P. Dutton & Co., New York 1931. One of the basic books showing attraction and danger of psycho-effective drugs.

Lindesmith, Alfred R.: *Opiate Addiction*. The Principia Press of Illinois, Evenston, Ill. 238 p. A sociologist explains his special theory of addiction.

Maurer, D. W. and Vogel, V. H.: *Narcotics and Narcotic Addiction*. Chas. C. Thomas, Springfield, Ill., 2nd ed. 1962, 339 p. Opiates and their synthetic equivalents, proof of addiction, treatment, legal controls for addicting drugs, addiction and crime, drug addiction and youth, etc.

Podolsky E. (Ed.): *Management of Addictions.* Philosophical Library, New York 1955, 413 p. Discussing different treatment approaches to Alcoholism and Drug Addiction.
Ropp, Robert S. de: *Drugs and the Mind.* St. Martin's Press, New York 1957, 309 p. Discusses the bliss and the danger of psycho-effective drugs.
Taylor, Norman: *Flight from Reality.* Duell, Sloan and Pearce, New York 1959, 235 p. Covers a wide range from opium to tea and coffee, describing different ways used by mankind to achieve some respite from the disenchantment of reality.
Watts, A. W.: *The Joyous Cosmology. Adventures in the Chemistry of Consciousness.* Pantheon Books, New York, 1962, 210 p. Perceptions, achieved through using chemical compounds, question the means and ends of our everyday realities.

Cigarette Smoking: Causes and Effects

*by J. Gregory Fraser, M.D.**

In the early 16th century, the use of tobacco for smoking was introduced into Europe by Spanish explorers who had learned this habit from the natives of the Western Hemisphere. Extolled mainly for its medicinal qualities, it was also condemned for its misuse. In 1621, Robert Burton declared in *The Anatomy of Melancholy:* "Tobacco, divine, rare, superexcellent Tobacco, which goes far beyond all their panaceas, potable gold, and philosopher's stones, a sovereign remedy to all diseases. A good vomit, I confess, a virtuous herb, if it be well qualified, opportunely taken, and medicinally used, but, as it is commonly abused by most men, which take it as Tinkers do Ale, 'tis a plague, a mischief, a violent purger of goods, land, health, hellish, devilish, and damned Tobacco, the ruin and overthrow of body and soul".(1) Throughout succeeding centuries, the use of tobacco has incurred the opposition of both secular and religious authorities and has been subject to scorn, to laughter, and to the severest of penalties — even corporal and capital punishment. Nevertheless, the habit has steadily increased in popularity until the tobacco industry today is of major importance in many national economies.(2), (3)

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Nicotine — Toxic and Addicting

Cigarette smoke, a mixture of gases and minute droplets, contains several hundred compounds of which nicotine, irritant chemicals, carcinogens and carbon monoxide are especially important, at least insofar as its harmful effects are concerned.

Nicotine is a highly toxic drug; its actions are complex and often unpredictable because it both stimulates and depresses many areas of the central and autonomic nervous systems. Readily absorbed from the oral and respiratory mucosal membranes as well as from the skin, nicotine produces in the novice smoker, nausea, salivation, vomiting, diarrhoea, headache, blurred vision and mental confusion. In addition to these symptoms, overdosage of nicotine causes a precipitous fall in the blood pressure, collapse, convulsions, respiratory failure and finally death.(4), (5) Tolerance to nicotine develops in the confirmed smoker, who rarely suffers the unpleasant symptoms common in novice smokers. Nicotine administered hypodermically to smokers and non-smokers, causes pleasant and unpleasant sensations respectively. It alleviates withdrawal symptoms such as irascibility, insomnia, diaphoresis, tremulousness, and restlessness, and it may also reverse the desire to smoke. This evidence supports the hypothesis that nicotine is responsible for the addicting nature of smoking but as yet the evidence for this cannot be accepted as conclusive.(5)

Irritating Effects of Smoke

The amount of carbon monoxide which smoke contains is variable but it is apparently insufficient in even heavy smokers to alter significantly the oxygen carrying capacity of blood. The irritant effects of smoking on the mucosal membranes of the mouth and respiratory passages depend on many factors related chiefly to the processing of tobacco, the manufacture of cigarettes, the characteristics of one's smoking habit and the constituents which tobacco contains. Whereas nicotine, ammonia, aldehydes, nitrogenous bases, volatile acids, phenols, and other chemical compounds contribute to these irritant effects, the moisture content of the tobacco and the tightness of its packing in the cigarette are equally important. Blindness from smoking is rare and probably occurs only in patients with Vitamin B_{12} deficiency. Smoking is interdicted in this condition and also in Buerger's Disease, a rare thrombotic occlusive disorder affecting the vessels of the lower limbs causing gangrene of the toes and then the feet in relatively young males.(4)

Heart Disease More Prevalent

By far the greatest damage to society from smoking arises because of its morbid and lethal effects in coronary heart disease, chronic bronchitis, lung cancer and peptic ulcers. All of these diseases occur more often in smokers than in non-smokers. While coronary heart disease is common in non-smokers, smokers have three times the incidence and death rate from this disease. There are many factors which contribute to its development and progression, for example, heredity, aging, obesity, hypertension, prolonged emotional stress and long excessive exercise. The most common manifestation of coronary heart disease is precordial pain called *angina pectoris,* and its most disquieting manifestation is the common occurrence of sudden death. Smoking precipitates precordial pain in some patients and when this occurs abstinence is mandatory.

Chronic bronchitis is a prominent cause of sickness and death in many countries, especially in the United Kingdom. This disease is characterized pathologically by an increase in the number of bronchial mucus glands and clinically by an excess of mucus secretion causing recurrent productive cough. Shortness of breath in chronic bronchitis initially occurs with acute infections and moderate exercise but as the disease progresses it is frequently associated with cold and damp weather; however, it is only a constant feature when this disease has progressed to the development of pulmonary emphysema. There are many questions in regard to chronic bronchitis which cannot be answered at present; for example, it is not known why there is an excess of bronchitis among the lower social groups, nor whether women are less susceptible to the disabling consequences of bronchial irritation from smoking and how important infection is in initiating the disease. There is no doubt, however, that abstinence from smoking and control of air pollution would greatly decrease the prevalence of this disease and hence the damage it causes.(2), (6)

It Does Cause Lung Cancer

Smoking causes lung cancer. The overwhelming evidence for this is chiefly statistical, pathological and experimental. This type of cancer is often incurable when diagnosed because of its early spread to both neighbouring and distant structures. At present, the results of treatment are deplorable, as revealed by a five-year survival rate of about six percent.

Lung cancer deaths are more frequent in smokers than in non-smokers and this risk increases in direct relation to the amount of smoking. It is especially important, therefore, for smokers to know that their risk of dying from lung cancer decreases if they stop smoking. These statistical findings have been repeatedly confirmed by research scientists in many countries. Pathologists describe changes, some precancerous, in the bronchial mucosa of smokers. These changes include basal cell hyperplasia, squamous metaplasia and carcinoma-in-situ and they increase in number in direct relation to the amount of smoking. These changes are absent or minimal in non-smokers, and they decrease in number in smokers who stop smoking.(7), (8)

Other Factors Increase Risk

Smoke or its tar does not cause lung cancer in experimental animals and this fact is sometimes wrongly interpreted as a refutation of the causal relation of smoking to lung cancer in man. Although experimental evidence is inconclusive by itself, it is important and it adds support to the statistical and pathological evidence. Smoke contains in small quantities, a number of carcinogens mainly polycyclic hydrocarbons, and tar condensed from smoke causes skin cancer in rats, rabbits and mice. Furthermore, if tobacco tar and another known carcinogen are applied together to the skin of these animals, more cancers develop than if either is used alone. This phenomenon is co-carcinogenic.(4), (7)

Tobacco smoke inhibits and then destroys the cilia of epithelial cells in the bronchial mucosa. The ciliary mechanism is one of several which together remove foreign substances from the bronchial tubes. Sufficient damage of this mechanism would tend to impair the removal of all foreign substances, including carcinogens from smoke and from the air one breathes and thereby increase the amount of time that the carcinogens are in contact with the epithelial cells.(7)

A Higher Death Rate

Smoking does not cause ulcers of the stomach and duodenum but it does delay their healing and hence increases their chronicity. This may explain the increased mortality from peptic ulcers in smokers which is nearly three times the mortality of non-smokers.

Major causes of death may be divided into five broad categories as follows: Cancer; pulmonary diseases excepting lung cancer; heart and circulatory diseases; accidents; violence and suicide; and other diseases. Smokers have a higher death rate from all of these categories except accidents, violence, and suicide. The maximum risk of smoking is determined from these statistics and is expressed by the fact that heavy smokers aged 35 years, have slightly more than twice the chance of dying before the age of 65 years than do non-smokers. This fact is even more impressive when one understands that this risk of dying is greater between the ages of 35 and 44 years than in subsequent decades, which have a progressive decrease in this risk.(4)

Educate and Prevent

Smoking ought to be everyone's concern. The inability of most heavy smokers to stop greatly increases the need for this concern. It does, nevertheless, direct our attention to the importance of preventing smoking, particularly among teenagers. In the United States, Britain and Canada, smoking is common among teenagers and those who become confirmed smokers during their school years are generally heavy smokers in later years. A number of factors, such as lack of achievement in academic studies or in extra-curricular activities, are more commonly found in students who smoke than in students who do not.(9) Whatever these observations imply about personality, one tends to agree that the prevalence of smoking in our society, and hence the strong social approval which this habit is accorded, is one of the most important forces which induce non-smokers to smoke. Each time a smoker lights up a cigarette he becomes a "living advertisement" for tobacco.(10) It may be, therefore, that the greatest onus in prevention rests with smokers themselves.

Presently, most smokers find it impossible to stop smoking and if this is a reliable measurement of what we must expect in the next five to ten years, the outlook is dismal. Whereas anti-smoking campaigns have achieved only small success, it is only reasonable that they should be continued with a view towards increasing their effectiveness. Not only should educational programs on the dangers of smoking be mandatory during school years, but it is of equal importance that those techniques be developed and practiced which will assure the effectiveness of these programs.

The Appeal of Advertising

The substantial increase in tobacco consumption during the past few decades is most probably the result of the effectiveness of advertising by the tobacco industry. Their efforts have been greatly augmented and possibly even surpassed by the effectiveness of its millions of customers, whose approval of smoking is publicly expressed many millions of times each day. Leaders of the tobacco industry deny that their advertisements encourage the non-smokers to smoke; it is, however, very difficult to believe that the association of smoking with refined tastes, pleasant and leisurely living, youthfulness, health and sexual appeal is as harmless as it is claimed.(11) Such appeal to the popular imagination must be investigated to assess its danger, and appropriate measures adopted to remove them.

Need Treatment Research

Smokers may be divided into two classes; those who wish to stop and those who do not. One hopes that effective treatment methods will evolve from the experience of the anti-smoking clinics which are now in operation. More must be learned of the psychological, social and physiological factors which together make it so difficult, and usually impossible, for a smoker to stop smoking. Smokers who claim that they do not wish to stop must surely deny the validity of the conclusions about the danger of smoking. One may be amused, frustrated, amazed, or aggravated to hear persons whose reflection on the facts has been nil or minimal, declare that the evidence is inconclusive or illogical. Nonetheless, it is a common response whatever the reasons, and, since one suspects that no evidence would convince these persons, it is necessary to learn more about the factors which are important in the genesis of such attitudes. ■

REFERENCES

(1) Burton, Robert; The Anatomy of Melancholy, Edited by F. Dell and P. Jordan Smith, B.A., B.D. George Routledge and Sons Ltd., London, 1931 — Page 577.

(2) Smoking and Health; Summary and Report of the Royal College of Physicians of London on Smoking in relation to Cancer of the Lung and Other Diseases. McLelland and Stewart Ltd., Toronto, 1962.

(3) Meiklejohn, A.; B.M.J. Pages 1618-1619, 1962.

(4) Goodman and Gilman; The Pharmacological Bases of Therapeutics, 2nd Edition. The MacMillan Company, New York 1955. Pages. 620-623.

(5) Leading Article; British Medical Journal, Page 557, 1963.

(6) Cigarette Smoking and Cancer, American Cancer Society, Inc. New York, 1963.

(7) Boyd, William; Textbook of Pathology, Lea and Febiger. Philadelphia 1961, Pages 681-691.

(8) Editorial; Canadian Medical Association Journal, Vol. 88, 326, 1963.

(9) Johnston, L.; Lancet, 2, 480, 1952.

(10) Editorial; Canadian Medical Association Journal, 88, 626, 1963.

(11) Editorial; Canadian Medical Association Journal, 88, 1120-1, 1963.

Gambling — An Addiction

*by Milo Tyndel, M.D., Ph.D.**

Ever so often, when we are dealing with patients who have drinking problems, we find that at one time or another these patients were engaged in gambling. We often get the idea that these persons, by continuing drinking in spite of their insight and experience, are jeopardizing their health, life, social and economic position, and their relationship with their family and the community. Frequently, there is a striking similarity between gambling and what is at stake in the abuse of alcohol to the point where we are inclined to view alcoholism as a sort of gambling.

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Our aim here is to review the psychological features common to gamblers, with an attempt to present gambling not as a vice or a crime, although it may have features of each of these, but as the expression of underlying serious psychopathology.

Gambling Defined

The term, gambling, is defined as playing games of chance for money, especially for high stakes; taking great risks to secure great results in war, finance and so on; and finally, risking or wagering something of value upon a chance. In all of these definitions, we find two words which seem to be most important in this context: chance and risk. Chance is defined as an unforeseen occurrence, an accident, an opportunity, a possibility. It is derived from the Latin word "cado" meaning "I fall". Synonymous words are fortune, hazard, fate and casualty. The word, risk, defined as danger, peril, exposure to hurt or loss, or the hazard of loss, is derived from the Latin "resecare", meaning "to cut off". Synonymous words are venture and jeopardy.

The meaning of all these words leaves no doubt about the fact that the individual has no power over the outcome of his act, the outcome being in the hands of some superior unknown power. The individual's only alternative, if he is to take his loss in stride, is to abstain from taking a chance — and this is precisely what he is unable to do if he is a gambler. As a matter of fact, everybody is gambling in one way or another by betting, playing games of chance, or taking chances in a variety of ways. Still, not everybody is a gambler. In order to label a person as a gambler, we must find certain patterns of behaviour and psychopathologic features which characterize him as a gambler, in contrast with the average person who would, on occasion, have similar features without, however, being overpowered by them to any considerable extent.

While the world literature of fiction has a great number of classical descriptions of the gambler and his gambling, of which Dostojewsky's "The Gambler" is the most important, the psychiatric literature is amazingly poor in this respect. Textbooks and handbooks of psychiatry either ignore gambling completely or just mention it in passing, in some instances as just another type of psychopathic personality. I think this is due to the fact that very few doctors, including psychiatrists, are dealing professionally with gamblers. Although, due to its serious social consequences, gambling must be considered a social illness, it cannot be compared with drinking in its scope and importance. It may cause both personal and family tragedy, it may affect business companies through embezzling; but it never affects large sectors of society as drinking does.

Only some psychoanalysts, among them Freud, Menninger, Kris, Simmel, Bergler, Fenichel and Galdston, have paid more attention to the personality of the gambler. This is perhaps due to the fact that analysts are the only therapists who have personal experience in treating gamblers and dealing with their problems, although one might suspect that the gambler would very seldom, if ever, seek help by himself because he would never recognize and admit that his gambling is the expression of a deep emotional disturbance, that is, the symptom of an illness.

Six Characteristics

According to Bergler, there are six descriptive characteristics of a gambler:

1. The gambler habitually takes chances.
2. The game precludes all other interests.
3. The gambler is full of optimism and never learns from defeat.
4. The gambler never stops when winning.
5. Despite initial caution, the gambler eventually risks too much.
6. "Pleasure — painful tension" (thrill) is experienced during the game.

Right away, we find some striking similarities with the alcoholic, although it is much more difficult to describe the "typical" alcoholic. However, allowances must be made for a variety of types of alcoholism, and only the hard core of alcoholics is considered. The alcoholic's interest in drinking also precludes all other interests to a high degree. He, too, is full of optimism concerning his ability to stop drinking and return to a normal life. He also starts with occasional social drinking with apparently no risks involved and ends up being an alcoholic. He, too, has pleasurable feelings while drinking although these feelings may be mixed with unpleasant, remorseful ones.

Motivations for Gambling

The gambler's conscious motivation for gambling boils down to two stock answers. First, he gambles because he wants to win money — by which he means big money and quickly — and this appears impossible through working. Secondly, he gambles because life is boring and gambling gives him thrills and excitement. The gambler usually has a number of irrational arguments in favour of his gambling which, to him, are convincing:

1. He is certain that he will win. This certainty is that of a fanatic in his belief of ultimate success.
2. He is convinced of his superiority.
3. He claims that life itself is nothing but a gamble.

In Bergler's view, the gambler is an example of those people who, for unconscious reasons, counteract their own success. He considers the gambler to be a psychic masochist, an objectively sick person who is subjectively unaware that he is sick. The act of gambling itself is a denial of the reality principle. In this act, the gambler is expressing his neurotic aggression against those who have taught him the reality principle, in most cases his parents. In losing, the gambler is paying the penalty for his unconscious aggression.

According to Galdston, the alcoholic, the gambler, and the superstitious person, carry into maturity and incorporate within their adult personalities emotional and psychological dynamisms and relational configurations that belong to the pre-adolescent and childhood period. Piaget believes that the child's logic is precausal in quality and nature. For the child, causality is largely an extension of arbitrary intention, the fulfilment of the desire or the caprice of potent agents, human or otherwise. The alcoholic, the superstitious person, and the gambler have retained within their personality structure the early precausal patterns of comprehending and dealing with reality and experience. The gambler behaves as if he were still a child to whom gifts may come by mere solicitation or by teasing for them, as indeed is the case in the child's experience.

Nothing Is Impossible

The alcoholic makes use of another precausality pattern, that of the denial of the unacceptable reality. To the child nothing is impossible, for in its world nothing obeys causal loss. The alcoholic, the superstitious person, and the gambler are to be viewed not merely as grown individuals embarrassed by the retention of some childish traits, but rather as sick individuals in whom the retention of pre-adult patterns is a symptom of some serious injury. These patients do not operate with childish patterns in the world of the child, but with childish patterns in the world of the adult. Result: distortion and disfigurement. They suffered severe deprivations in their affect relations with their parents. According to Greenson, in the history of neurotic gamblers we find severe deprivation and/or overgratification in that childhood. From these psychopathological findings, Bergler draws the conclusion that the gambler is a misunderstood neurotic.

To the gambler, money is nothing but a token of his favour; it is not the aim of his gambling. He behaves as if he were bent on soliciting and teasing Fortune into smiling benignantly upon him and granting him her favours. Neurotic gambling can be understood as a compulsive acting out of a plea to surrogated figures (mother, father) for a show of favour, for the affirmative response to the questions, "Do you love me?", "Do you approve of me?", "Do you think I am good, and smart, and strong?".

Conflicts with Reality

Bergler and Greenson describe the gambler as one who has regressed to infantile longings for omnipotence. Galdston is rather persuaded to consider him as one who has not successfully egressed out of the child's world of precausality. He thinks the primal injury has taken place in the early affect relations between mother and child, the father playing a secondary role. The triad alcoholism, gambling and superstition are conditions which are notoriously resistant to therapy.

According to Fenichel, the passion for gambling is a displaced expression of conflicts around infantile sexuality, aroused by the fear of losing necessary reassurances regarding anxiety or guilt feelings. As a rule, the conflicts are those centered around masturbation. In his view, the excitement of the game corresponds to sexual excitement; that of winning to orgasm (and to killing); that of losing, to punishment by castration (and by being killed). Just as compulsion neurotics invent various kinds of oracles in their intention to force God to permit masturbation and to free them of their guilt feeling (which as a rule fails), the gambler, too, tempts Fate to declare whether it is in favour of his playing (masturbation) or whether it is going to castrate him. As in all conflicts around masturbation, here too, the activity serves as the scapegoat for the objectionable (hostile) phantasies of which it is the agent. The intensity of the conflict around getting the "supplies" again hints at an old fixation; besides, the anal element (the part played by money) also appears to be conspicuous. The importance of orality in gambling is repeatedly emphasized by Bergler.

Fenichel has to admit that all this is not sufficient to explain the specific passion for gambling. In its essence, gambling is a provocation of Fate which is forced to make its decision for or against the individual. Luck means a promise of protection (of narcissistic supplies) in future instinctual acts. But what is more important is that the typical gambler consciously or unconsciously believes in his right to ask for special protection by Fate. His gambling is an attempt to compel Fate, in a magical way, to do its "duty"; however, gambling is a fight with Fate. The gambler threatens to kill Fate if it refuses the necessary supply and is ready, for this purpose, to run the risk of being killed. Actually, the unconscious masturbatory phantasies of gambling often centre around patricide.

The Need for Punishment

In honest gambling, the chance of losing is as great as the chance of winning. The gambler dares to compel the gods to make a decision about him, looking for their forgiveness. But even to lose (to be sentenced or killed) seems to him preferable to a continuation of the unbearable superego pressure. If winning in gambling means rebellion in order to get what is needed, luck is unconsciously looked upon as ingratiation for the same purpose.

Many impulsive actions tend to express not only instinctual drives but the demands of a severe superego as well. The gambler may eventually be ruined, the arsonist and thief ultimately be caught. Impulsive behavior often makes its appearance among moral masochists with an intense need for punishment. Qualitatively, there is no difference in this respect between such impulses and compulsions or perversions; many compulsions aim to satisfy the demands of the superego by means of punishment, and some exhibitionists feel tempted only when a policeman is in the vicinity. Quantitatively, however, there is a difference: the conflict with the superego more frequently dominates the picture in impulse-neurosis. The true gambler must eventually be ruined. This theme is illustrated by the fact that impulse neurosis, like manic-depressive states, frequently present a periodic ultimate between guilt-laden periods in which the superego apparently is inoperative.

Gambling and masturbation have another point in common, in that both are intended as a kind of play. The psychological function of play is to get rid of extreme tensions by the active repetition or anticipation of these tensions in a self-chosen dosage and at a self-chosen time. Masturbation in childhood and puberty, in this sense, is "playing at" sexual excitement, acquainting the ego with this excitement and preparing it for the ability to control it. Gambling, in the beginning, is thought of as "playing", in the sense that the oracle is "playfully" asked how it would decide in a more serious situation. Under the pressure of inner tension, the playful character may be lost. The ego can no longer control what it has initiated, but is overwhelmed by a serious, vicious circle of anxiety, violent need for reassurance, and anxiety over the intensity of this violence. The pastime becomes a matter of life and death.

Addiction Without Drugs

In the preceding pages, I have attempted to present some of the pathological features assumed to be characteristically found in the personality of the neurotic gambler. At least some of these features are being found in the personality make-up of the alcoholic and of the addict. According to the accepted definition of addiction, this is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated administration of a drug. Its characteristics are a compulsion to continue to take the drug and to increase the dose, with the development of psychic and sometimes physical dependence on the effects of the drug, so that the development of a means to continue the administration of the drug becomes an important motive in the addict's existence.

In recent years, we have become used to viewing addiction in a much broader scope. It is well known that the mechanisms and symptoms of addiction also occur without the use of any drug and thus without the complications brought about by the chemical effects of drugs. There is the food addict, the reading addict, the love addict; and there is a variety of hobbies which tend to outgrow their hobby character and to evolve into an obsessive preoccupation, eventually becoming an absolutely necessary condition for well being and protection against depression.

All the morbid impulses, as well as the addictions with and without drugs, have in common the fact that they are unsuccessful attempts to master guilt, depression or anxiety in their own way, mostly by activity. The same holds true for both gambling and drinking. Seen in this light, gambling takes the shape of another addiction. In our endeavour to learn more about the disease, addiction, which is so difficult to understand, I feel that it is of extreme importance to enlarge the scope of our investigation — which would mean including gambling in the realm of our studies.

Just as a side note, I would like to point out that a number of ex-gamblers, that is persons who have succeeded in giving up their gambling addiction, have set up a society known as Gamblers Anonymous — an analogy with Alcoholics Anonymous and Narcotics Anonymous. ■

REFERENCES

E. Bergler: The Gambler: A Misunderstood Neurotic. Journal of Criminal Psychology IV, 1943.

E. Bergler: The Pathology of Gambling. B. Hanison, London, 1958.

O. Fenichel: The Psychoanalytic Theory of Neurosis. W. W. Norton and Company, New York, 1945.

S. Freud: Dostojewsky and Parricide. The Realist 1, 1929.

S. Freud: Some Character Types Met With in Psychoanalytic Work. Collected Papers IV.

I. Galdston: The Psychodynamics of the Triad Alcoholism, Gambling and Superstition. Mental Hygiene, vol. xxxv, no. 4, 1951.

Ralph R. Greenston: On Gambling. The American Image, vol. 4, August 1946.

E. Kris: Ego Development and the Comic. International Journal of Psychoanalysis, xix, 1938.

K. Menninger: Criminal Behaviour as a Form of Masked Self-Destructiveness. Menninger Bulletin 11, 1938.

E. Simmel: Psychoanalysis of the Gambler. (Paper read before the Sixth International Congress of Psychoanalysis, 1920).

Mechanisms and Management of Obesity*

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The Psychology of Obesity

The psychology of severe, persistent obesity, as of any other addiction, should be considered from three viewpoints: impulses, controls and consequences. The appropriate medical treatment of obesity requires careful attention to all three components. In this communication I shall discuss first the three components, then the steps involved in establishing a diagnosis, and finally some suggestions for treatment.

Impulses

The obese patient usually struggles unsuccessfully to control an appetite that in a child is called "healthy." Although its strength is difficult to measure, since appetite is a subjective phenomenon, there are undoubtedly individual differences in appetite, related to various combinations of genetic, hormonal, neurologic, social and enzymatic factors. Appetite per se, however, is not the problem in obesity; there are people who can eat a great deal and still maintain normal weight, and there are others who seem to be able to control enormous appetites. A patient becomes obese only when he does not control surplus appetite, or appetite in excess of that required to maintain his metabolic functions.

Although, there are individual differences in metabolism as well as individual differences in appetite, the body's regulating mechanisms usually correlate the two. Thus the adolescent growth spurt is usually associated with increased appetite, and decreased metabolic needs in aging are customarily accompanied by decreased

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appetite. Distortions of metabolism, in which the deposit of fat takes precedence over other metabolic needs, and disturbances of appetite due to hypothalamic lesions ordinarily can be identified by other clinical manifestations and probably do not play a role in the usual case of obesity. Abnormally low metabolic needs attributable to such endocrine disturbances as thyroid deficiency are rarely involved, and the use of thyroid substances in the treatment of simple obesity is contraindicated.

By far the most frequent cause of obesity, therefore, is an imbalance between food intake and energy output. In some people the problem is simply a matter of conditioning, either within the cultural pattern of a family or larger group in which large meals of high caloric content are customary and obesity is sanctioned or even encouraged, or through failure to adapt diet to decreased metabolic needs, as when an athlete retires to a more sedentary life. In these cases treatment by using a diet as a stimulus to reconditioning is customarily sufficient. Similar conservative measures usually can relieve the type of obesity which results from "overeating as a substitute gratification in intolerable life situations,"[5] once the precipitating crisis has been resolved.

More comprehensive measures are required, however, in severe and persistent obesity. In these patients, the cause of the increased appetite can be found in the symbolic meaning of food. Food along with cuddling and other evidence of affection are the primary media of communication between the infant and its mother, and their juxtaposition makes it easy for one to become the symbol for the other. Later, a mother's strong emphasis on the amount and type of food the child eats reinforces the association between food and affection, as the child observes that he can please his mother and gain her approval and evidences of her affection by eating, and can displease her by not eating.

The child who feels that he is not loved or who is constrained for one reason or another from seeking the direct expression of affection may look subconsciously to food as a substitute. The temporary relief he obtains from the substitute then encourages him to come back for more. His basic need for affection continues, however, since it is not really met or for the most part even recognized as such, and so he goes on eating indefinitely as his need for affection is expressed through his increased appetite. The repetitive pattern is the same as in other addictions; the use of alcohol, for example, does not resolve the alcoholic's basic problems, but in providing temporary relief, it encourages his drinking.

Although impulses to seek affection through a food-substitute or to repeat a procedure which once brought approval from the mother are seldom identified as such by the obese patient, the substitution is partially evident to some patients who recognize that their appetites are greatest when they are depressed or lonely. Patients who cannot sleep are most aware of their loneliness at night when others are asleep, and so may regularly make nocturnal raids on the icebox, while adhering to their diets during the less lonely daytime.[6]

The impulse to eat may also be mobilized when a more mature impulse frightens the individual into regressing to a safer level of adaptation. This pattern is occasionally found in adolescents whose appetites increase at the same time as their sexual impulses emerge; once overweight, they are less attractive and, therefore, sexually more protected, so the consequences of overeating become an unconscious incentive to continue to eat.

Controls

Since many people with a history similar to the obese patient's history do not overeat, it is necessary to study the obese patient's internal control system as well as his appetite.

Soon after the child develops a capacity for autonomous activity, his environment, particularly his family, begins to set limits to the expression of his impulses. For a while the child asserts his independence by challenging these limits, and some children go on challenging them indefinitely. Eventually, however, as the average child gains confidence in his individuality, he incorporates most of the parental limits in the form of a conscience and other internal controls. He then tells himself what impulses not to gratify—in the area of food, not to eat between meals, not to be greedy, not to eat too much candy, and so on.

The strength of children's internal controls varies: in the same child some impulses may be well controlled while others are poorly controlled. In most children, the controls against theft, murder, arson and other antisocial behavior are strong enough to be effective no matter how strong is the impulse. For example, it is frequently impossible in wartime to overcome a soldier's prohibitions against killing to the degree necessary to make him effective in action against the enemy. The controls against overeating, however, are seldom as stringent.

The vigor of parental limit-setting is not always reflected in the strength of the child's conscience. Sometimes a child has the poorest controls over the impulse that the parents are most vocal about. These discrepancies seem to be related to parental expectation of unacceptable behavior. Thus the child of a parent who strongly disapproves of drinking may nevertheless become an alcoholic if the parent signals his expectations of alcoholism by insisting on smelling his high-school son's breath when he returns from evenings out, by making it evident that he is looking for concealed liquor among the son's possessions, or by interpreting a single drink as evidence of the inevitability of alcoholism. The consistent expectation by others that he cannot set limits to his drinking convinces the son that he cannot control his drinking. Each episode of drinking to excess strengthens his conviction and makes the next episode more inevitable.

In the same way the child's recognition that his parents expect him not to control his appetite weakens the child's estimate of his controls in that area and an analogous vicious circle begins. Thus a child initially may overeat either to find a substitute for affection or to gain the approval of a mother who equates fat children with healthy children, and whose own insecurity as a mother requires the reassurance of a fat, healthy child. However, once the child is fat, for whatever reason, the rest of the world joins in a conspiracy to convince him that he has no control over his appetite. Although he is laughed at for his weight, at the same time he is given the largest piece of cake and expected to eat it.[4]

Another complication arises when a child receives simultaneous but opposite parental messages. Often a mother is conscious of only one message, "don't be a glutton," and is not aware that at the same time she is subtly encouraging the child to eat—so as to be "healthy," and so as to reflect credit on her ability as a mother. When a child enmeshed in this pattern tries to reduce, he gets little help; pediatricians are familiar with mothers who rationalize their sabotage of their children's reducing diets by asserting the importance of "keeping his strength up." The mother, vaguely uneasy or anxious about her inability to give affection, attempts to relieve her anxiety by giving food in excess. Meanwhile the child, deprived of affection but offered food as a substitute, responds both to his own need by increased appetite, and to his mother's expectation by overeating.

This reciprocal pattern may persist long after childhood, as in a 35 year old married attorney whose lifelong obesity had reached a mountainous 300 pounds. His wife could not understand why her efforts to limit him to his reducing diet were so unsuccessful. She did not know, and he was too ashamed to tell her, that every day when he stopped by to see his mother on his way home from work, his mother would tell him that she was afraid his diet would weaken him, and would ply him with sandwiches, ice cream and cake, which he ate "so as not to hurt her feelings."

Consequences

Along with his overweight, the fat man is usually ashamed of his lack of control. He defends himself according to whatever pattern of psychological defenses is customary for him—he may rationalize that his heredity or his glands give him no alternative; he may project the responsibility onto his wife for alleged failure to feed him the proper diet; or he may unconsciously deny that he eats too much, insisting that he eats only "enough to keep a bird alive." He may be inwardly so convinced of the validity of the theory that the only healthy baby is a fat baby that he becomes very anxious at the prospect of losing weight. Or he may rely so much on food as a substitute for affection that a reducing diet causes him to feel unloved and depressed. These defenses make it hard for him to accept the fact that he is addicted to overeating, and that it is an emotional problem. Other consequences include secondary gains: either increased concern and solicitousness, particularly about diet, as shown by both the wife and the mother of the attorney in the previous illustration; or the provision of an excuse to avoid physical or sexual competition.

Diagnosis

The diagnosis of the existence of obesity is obvious; the diagnosis of the nature of obesity requires careful history-taking. Since treatment begins during the diagnostic process, and since support of the patient's self-esteem is necessary in any therapeutic program, the history should be taken without evidence of contempt or criticism.

The physician should obtain a chronological history of the development of the obesity; its variations in extent over the years; the attempts at treatment, their methods and results; and the patient's explanations for the causes of the obesity and the failure of previous attempts at its correction. The response to this exploration gives the physician clues about the patient's pattern of response to his obesity; the extent of rationalization, projection, or denial; and the amount of overt shame or depression the patient feels as a result.

The differentiation between depression as a cause and as an effect of obesity is difficult. The physician may find evidence of depression as a causative factor by ascertaining under what conditions the patient's appetite is strongest. Emphasis on variations in appetite rather than on intake of food often helps the patient to be less defensive, and many patients will describe an association between hunger and depression or loneliness. The physician's goal in the initial history-taking is more to evaluate the relationship of the patient's excessive appetite to depression than to explore the causes of depression, unless the patient spontaneously wishes to explore them.

By this time the physician has usually noted the patient's discouragement or fatalism about his overeating. A possible approach to the problem of the patient's lack of confidence in his controls might be:

"Mr. X, you seem to be discouraged about the possibility of losing weight, almost as if you considered yourself different from other people in your basic ability to restrain your impulse to eat."

Most patients indicate their appreciation of this evidence of empathy, and the physician can go on to say something like this:

"Do you remember when and from whom you first got the idea that you were expected not to control your eating?"

Although this approach may draw a blank, it may also lead to material from which the patient can realize that early in his life he has accepted as accurate and unchangeable someone else's, usually a parent's, estimate of his ability to control his eating. If this realization develops, the physician may be able to lay the foundation for further exploration with a comment such as:

"I am not sure that their opinion of the weakess of your internal restraints as a child is valid for you as an adult."

The patient usually then protests that his unsuccessful atempts at weight reduction prove that he lacks control. The physician, carefully avoiding direct argument, may then say:

"I can see how these attempts have been discouraging. On the other hand, they might also be considered temporary successes in spite of your conviction that they would fail. I wonder if the temporary successes don't mean that you have more ability to control than you believe you have."

Similar statements, adapted to the patient's specific situation, and implying that he has a greater potential capacity for restraint than he believes he has, may help him to develop his self-esteem and his confidence in his ability eventually to solve his problem. Critical or deprecatory comments, on the other hand, increase his feeling of rejection and depression and decrease his confidence in his eventual ability to reduce.

In the course of history-taking, evidence of specific metabolic distortions may appear. Usually they do not, and the physician is well-advised to give the patient a tentative formulation before undertaking the physical exmination and appropriate laboratory tests:

"Mr. X, from the material we have discussed I suspect that our problem is going to be essentially one of helping you recognize and learn to use more of your ability to control your eating, as well as understanding more about the situations in which your appetite is increased. I want to do a physical examination, of course, and carry out any laboratory tests that seem indicated, but although they may be important in evaluating the results of your weight problem, I frankly doubt that they will shed much light on the cause."

If this kind of tentative diagnostic statement is deferred until after a complete work-up, the patient and often the physician build their hopes on a relatively effortless solution by means of pills; when they are disappointed, the patient is likely to feel that the physician has not prescribed enough tests and is falling back on a psychological explanation only because he cannot find the "true" cause. When the tentative diagnostic statement is made early, however, the patient is more inclined to feel that the physician really believes in the psychological causation. Later, when the tests turn out to be negative, the patient's acceptance of the diagnosis is facilitated, because the tests have confirmed the physician's clinical impression.

Treatment

Early success in the treatment of severe and persistent obesity is deceptive; the impetus that brought the patient to the physician in the first place is usually enough to make any regimen an apparent success for three or four weeks. The frequency of "relapse" clearly indicates that weight reduction by itself is not a cure; the problem is to maintain weight reduction over an indefinite period of time.

Obesity, in common with other addictions, tends to be persistent and recurrent. In one sense, obesity is a more difficult problem than other addictions. "Tapering off" is a notoriously unsuccessful procedure for the alcoholic or tobacco addict; with complete abstinence, the chances of overcoming the habit are greater, although the risk of re-addiction following the first drink or the first cigarette is high. The obese patient, however, must continue to eat something, and so is constantly tempted to overeat.

In most other ways obesity resembles other addictions, and treatment should be directed toward reducing the neurotic increment of the impulse to eat, increasing the patient's confidence in his ability to control his response to his impulse to eat, and reducing the secondary gains and other consequences of overeating that encourage the continuation of the symptom. Once both doctor and patient have identified it as an emotional problem, obesity should be treated as an emotional problem, primarily with empathic listening within realistic limits; clarification of alternatives, particularly alternative solutions of his underlying need for affection; and support of the patient's self esteem and his personality strengths.[1]

Treatment should be discontinued if it becomes apparent that the effects of treatment will be worse than the illness. Bruch[2] points out, in "The Importance of Overweight," that the depression underlying some obesity is so profound and so basic to the patient's personality that it is best kept concealed, as it were, beneath folds of fat. It is important, therefore, to evaluate the underlying depression carefully before undertaking too vigorous psychotherapy. Signs of depression usually become manifest towards the end of the initial period of weight loss; if they appear to be overwhelming, the physician may decide that it is safer to support the patient's denial and rationalization, and to desist in his efforts to keep the patient from relapsing.

Unfortunately, many of the measures commonly undertaken in the treatment of obesity serve to convince the patient that he does not have the capacity to set limits to his impulse to overeat. The short-term success of these measures leads him to believe that he must look outside of himself for controls, and their eventual failure further diminishes his self-esteem. Medications and special foods fall into this category, as does hospitalization to "prove to the patient" that proper diet can control weight.

Even diets may backfire, unless they are provided only for information that the patient does not already have.[3] The usual prescription of a diet with subsequent checking of weight at regular intervals treats the adult patient as a child. It encourages him to re-enact childhood situations in which his mother—now the doctor—told him what he should and should not eat, and in which he could please or displease his mother (doctor) by following or not following her suggestions. As he transfers his feeling in this area from mother to doctor, he also transfers feelings of resentment at his mother's domination, and declares his independence by proving that the doctor cannot control his eating. The doctor, annoyed at the patient's failure to follow orders, becomes increasingly critical; the patient's transferred resentment is augmented by direct resentment, and the battle continues.

In an interview with a medical student, a patient in a prenatal clinic complained that her obstetrician was always "bawling her out" because she gained so much weight. As she was talking, the student noticed that she was smiling. When asked what amused her about the situation, she confided that she had baked a chocolate cake and was going to eat it as soon as she had been weighed, had seen the obstetrician, and had returned home.

The illogicality of such a situation frustrates the physician—it only makes sense if seen in the light of transferred feelings from childhood relationships. And although prescribing diets and weighing obese patients seem to be the natural thing to do, in the long run the patient must select and limit his own diet and check his own weight for his and not the doctor's satisfaction ■

REFERENCES

1. Aldrich, C. K.: Psychiatry for the Family Physician. New York, McGraw-Hill, 1955.
2. Bruch, H.: The Importance of Overweight. New York, W. W. Norton & Co., 1957.
3. Feinstein, A. R.: The treatment of obesity: An analysis of methods, results, and factors which influence success. J. Chronic Dis. *11:* 349-393, 1960.
4. Frazier, S. H., Faubion, M. H., Giffin, M. E. and Johnson, A. M.: A specific factor in symptom choice. Proc. Staff Meet. Mayo Clin. *30:* 227-243, 1955.
5. Hamburger, W. W.: Emotional aspects of obesity. M. CLIN. NORTH AMERICA *35:* 483-499, 1951.
6. Stunkard, A. J., Grace, W. J. and Wolff, H. G.: The night-eating syndrome: A pattern of food intake among certain obese patients. Am. J. Med. *19:* 78-86, 1955.
7. Stunkard, A. J. and McLaren-Hume, M.: The results of treatment for obesity. A.M.A. Arch. Int. Med. *103:* 79-85, 1959.

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Chemicals help man in his external and internal environmental adjustments. As a result of this satisfaction, man forms a **CHEMICAL DEPENDENCY** which may progress to habituation or addiction to these drugs (HOLMES)

The inability of most heavy smokers to stop greatly increases the need for concern. It directs our attention to the importance of preventing **SMOKING** particularly among teenagers. (FRASER)

All the morbid impulses — as well as the addictions with and without drugs — have in common the fact that they are unsuccessful attempts to master guilt, depression, or anxiety in their own way, mostly by activity. The same holds true for both gambling and drinking. Seen in this light, **GAMBLING**

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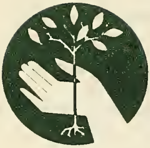

Over the years since the Foundation first used this circular symbol as an identifying mark, many questions have been asked about its meaning.

Many variations on this design were put aside because the hand was too-protective, too-supportive, even smothering.

The concept of this symbol? — That of an organization that is trying to help people meet life's difficulties more adequately and without the very real danger of becoming excessively dependent upon the organization or its personnel.

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